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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* VINOJ N. KUMAR and NARENDER R. VANGATI

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Appeal 2009-007117  
Application 10/723,150  
Technology Center 2400

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Before HOWARD B. BLANKENSHIP, ST. JOHN COURTENAY III, and  
STEPHEN C. SIU, *Administrative Patent Judges*.

BLANKENSHIP, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

## STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1-20, which are all the claims in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

### *Invention*

Appellants' invention relates to a method of generating a representation of an access control list. The representation is utilizable in a network processor or other type of processor to perform packet filtering or other type of access control list based function. A plurality of rules of the access control list are determined. Each of at least a subset of the rules has a plurality of fields and a corresponding action. The rules are processed to generate a multi-level tree representation of the access control list, in which each of one or more of the levels of the tree representation is associated with a corresponding one of the fields. At least one level of the tree representation other than a root level of the tree representation comprises a plurality of nodes, with at least two of the nodes at that level each having a separate matching table associated therewith. Abstract.

### *Representative Claim*

1. A method of generating a representation of an access control list, the representation being utilizable in a processor, the method comprising the steps of:

determining a plurality of rules of the access control list, each of at least a subset of the rules having a plurality of fields and a corresponding action; and

processing the rules to generate a multi-level tree representation of the access control list, each of one or more of the levels of the tree representation being associated with a corresponding one of the fields;

wherein at least one level of the tree representation other than a root level of the tree representation comprises a plurality of nodes, with at least two of the nodes at that level each having a separate matching table associated therewith.

#### *Examiner's Rejections*

Claims 1, 3-9, 11, 12, 15, 17, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cathey (US 2002/0085560 A1) and Holdsworth (US 2003/0188198 A1).

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Cathey, Holdsworth, and Miller (US 2003/0005146 A1).

Claims 10, 13, 14, 16, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cathey, Holdsworth, and Gai (US 6,651,096 B1).

#### *Claim Groupings*

In view of Appellants' arguments in the Appeal Brief, we will decide the appeal on the basis of claims 1, 2, 6, 7, 9, and 10. *See* 37 C.F.R. § 41.37(c)(1)(vii).

#### PRINCIPAL ISSUE

Have Appellants shown that the Examiner erred in finding that the combination of Cathey and Holdsworth teaches at least one level of the tree

representation other than a root level having a plurality of nodes with at least two of the nodes at that level each having a separate matching table associated therewith?

## FINDINGS OF FACT

We rely on the findings of fact made by the Examiner in the Final Rejection and the Examiner's Answer.

## PRINCIPLES OF LAW

### *Claim Interpretation*

During examination, claims are to be given their broadest reasonable interpretation consistent with the specification, and the language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Amer. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (citations omitted). The Office must apply the broadest reasonable meaning to the claim language, taking into account any definitions presented in the specification. *Id.* (citations omitted).

### *Obviousness*

“What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103.” *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 419 (2007). “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416.

## ANALYSIS

### *Section 103 rejection of claims 1, 3-5, 8, 11, 12, 15, 17, and 20*

The Examiner finds that Cathey teaches at least one level of the tree representation other than a root level comprises a plurality of nodes. The Examiner also finds that Holdsworth teaches at least two of the nodes at that level each having a separate matching table associated therewith. The Examiner concludes that the combination of Cathey and Holdsworth teaches “at least one level of the tree representation other than a root level of the tree representation comprises a plurality of nodes, with at least two of the nodes at that level each having a separate matching table associated therewith” as recited in claim 1. Ans. 3-4, 8-9.

Appellants contend that neither Cathey alone nor Holdsworth alone teaches at least one level of the tree representation other than a root level having a plurality of nodes with at least two of the nodes at that level each having a separate matching table associated therewith. App. Br. 6-7.

Appellants’ contention about each reference individually does not rebut the Examiner’s finding that the combination of Cathey and Holdsworth teaches at least one level of the tree representation other than a root level having a plurality of nodes with at least two of the nodes at that level each having a separate matching table associated therewith.

Appellants further contend that Cathey shows a single ACL, and Holdsworth shows a separate ACL at each node of a tree of message topics. Appellants conclude that the ACL arrangement of Holdsworth is therefore incompatible with the ACL of Cathey. App. Br. 7-9.

Although Holdsworth discusses separate access control lists at each node, each list corresponds to the claimed “separate matching table” at each

node. Appellants have not provided a definition of the term “separate matching table” that excludes the access controls specified at each node as taught by Holdsworth. In fact, the separate matching tables shown in Figure 3 of Appellants’ Specification appear to specify access controls at each node of level 2. *See Spec. 12:12-25.* Therefore, the access controls that are specified at each node as taught by Holdsworth are “a separate matching table” within the meaning of claim 1. Each of Cathey and Holdsworth discloses a tree structure representation that comprises a plurality of nodes. Holdsworth teaches a separate matching table at each node. Appellants have not provided evidence or persuasive arguments to show that the separate matching table at each node of the tree representation of Holdsworth is incompatible with the nodes in the tree representation of Cathey.

Appellants contend that Cathey teaches away from the separate matching tables of claim 1 because each of the leaves of the decision tree of Cathey is coupled to the root via a unique set of linked branches. App. Br. 8. However, Appellants’ Figure 3 shows a single branching that occurs at each node. Further, Appellant has failed to cite any portion of Cathey that would criticize, discredit, or otherwise discourage an artisan from using the matching tables of Holdsworth in the decision tree of Cathey. We therefore find that Cathey does not teach away from using the matching tables of Holdsworth.

Appellants contend that the Examiner has failed to provide sufficient motivation for combining Cathey and Holdsworth. In particular, Appellants contend that the Examiner’s reason of modifying Cathey using the matching tables of Holdsworth “to enhance network security” is insufficient because Cathey alone can clearly provide access control and network security. App.

Br. 8. The Examiner finds that both Cathey and Holdsworth are in the art of network security. The Examiner further finds that adding the ACL data of Holdsworth to the decision tree of Cathey allows the decision tree of Cathey to safely classify packets by comparing incoming packets with ACL data.

Ans. 9-10. Appellants respond that this motivation is deficient because the topic-based structure of Holdsworth is not readily adaptable to the single ACL of Cathey, and may well be unworkable. Reply Br. 3. However, Appellants have not provided evidence or persuasive arguments to show that adding the access controls described by Holdsworth to each node of the tree structure described by Cathey is in fact unworkable.

Appellants contend that the combination of Cathey and Holdsworth entirely fails to provide the benefits described on pages 8, 9, and 11 of Appellants' Specification. App. Br. 9. However, the benefits described in the Specification are not recited in the claim and we find no basis for reading the alleged benefits into the claim.

We sustain the rejection of claim 1 under 35 U.S.C. § 103(a). Appellants have not presented arguments for separate patentability of claims 1, 3-5, 8, 11, 12, 15, 17 and 20, which thus fall with claim 1.

*Section 103 rejection of claim 6*

Appellants contend that Cathey does not disclose having nodes that are each associated with a subtree of a given one of a number of distinct source addresses of the root level of the tree. App. Br. 10. The Examiner finds that the second level of figure 5B of Cathey is connected to, or "associated with," a subtree of a given one of the distinct source addresses of



the root level within the meaning of claim 6. Ans. 10. Appellants have not responded to the Examiner's finding.

We sustain the rejection of claim 6 under 35 U.S.C. § 103(a).

*Section 103 rejection of claim 7*

Appellants contend that Cathey does not disclose a given one of the second level subtrees identifies one or more destination addresses to be examined if the corresponding root level source address matches a source address of a given received packet. App. Br. 10. The Examiner finds that figure 5B of Cathey identifies destination addresses to be examined by matching to prestored data. Ans. 10. Appellants have not responded to this finding by the Examiner.

We sustain the rejection of claim 7 under 35 U.S.C. § 103(a).

*Section 103 rejection of claim 9*

Appellants contend that Cathey does not describe how the decision tree of figure 5B is generated. App. Br. 11. The Examiner finds that paragraph 30 of Cathey describes generating a decision tree. Ans. 11. Appellants have not responded to this finding by the Examiner.

We sustain the rejection of claim 9 under 35 U.S.C. § 103(a).

*Section 103 rejection of claim 2*

Appellants contend that the combination of Cathey and Holdsworth fails to teach or suggest an arrangement in which at least two of the nodes at a non-root level of a tree representation each have a separate matching table associated therewith. Appellants also contend that Miller fails to remedy

this deficiency. App. Br. 11-12. Appellants' arguments are similar to the arguments presented for claim 1, which we find unpersuasive.

We sustain the rejection of claim 2 under 35 U.S.C. § 103(a).

*Section 103 rejection of claims 10, 13, 14, 16, 18, and 19*

Appellants contend that Gai does not describe non-root level nodes of a tree having matching tables arranged in order of decreasing specificity. App. Br. 12. The Examiner finds that Gai teaches matching tables arranged in decreasing order of specificity (Ans. 11), and the combination of Cathey and Holdsworth teaches non-root level nodes having matching tables (Ans. 3-4). Appellants' contention does not address the Examiner's findings.

We sustain the rejection of claim 10. Appellants have not presented arguments for separate patentability of claims 13, 14, 16, 18, and 19, which thus fall with claim 10.

## CONCLUSION OF LAW

Appellants have not shown that the Examiner erred in finding that the combination of Cathey and Holdsworth teaches at least one level of the tree representation other than a root level having a plurality of nodes with at least two of the nodes at that level each having a separate matching table associated therewith.

## DECISION

The rejection of claims 1, 3-9, 11, 12, 15, 17, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Cathey and Holdsworth is affirmed.

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The rejection of claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Cathey, Holdsworth, and Miller is affirmed.

The rejection of claims 10, 13, 14, 16, 18, and 19 under 35 U.S.C. § 103(a) as being unpatentable over Cathey, Holdsworth, and Gai is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 41.50(f).

AFFIRMED

msc

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